ENERGY SERVICES
BULLETIN
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ELECTRIC SAVINGS PRODUCE FRESH RESULTS FOR HOLY CROSS CONSUMERS

When Tom Clark Jr. sized up the grocery store space he'd leased in Snowmass Village, Colorado, last year, it was clear Clark's Market needed a soup-to-nuts overhaul to take advantage of today's advanced heating, refrigeration and lighting systems.

Gutting the 14,000-square-foot space and installing new super-efficient systems were going to cost more upfront, but, "Going with the standard was never really an option for us," said Clark.

Clark's Market turned to member-owned Holy Cross Energy and its We Care energy efficiency program for help, just as hundreds of other businesses and households served by the electric co-op have done over the past nine years.

A rebate of $15,000 from Holy Cross made the market's investment in high-efficiency upgrades a lot easier to swallow. "These things aren't cheap, but once you get them in place the benefits are numerous," said Clark, who opened the market for business in July 2014. "When you are operating with energy-efficient equipment, it runs cooler, runs longer, there's less maintenance and you can put out a superior product. It has been such a runaway success for us."

Tom Clark was determined to reduce energy use at Clark's Market in Snowmass Village, Colorado, so he turned to Holy Cross Energy for help. (Photo by Holy Cross Energy)

Clark is focused on quality, but the high-efficiency systems are also saving energy. From September 2014 to March 2015, Clark's Market used 155,000 fewer kilowatt-hours (kWh), cut the store's electric demand in half and saved $13,268 on electric bills compared to bills tallied by the previous grocery store in the same space.

Results at Clark's Market prove that energy efficiency is a solid investment, and Holy Cross Energy is working to help more of its business and household consumers benefit from similar paybacks.

One of 1,000 upgrades

Seeking deeper energy savings from its We Care program, Holy Cross Energy set a five-year goal in 2013 for its consumers to save 33,000 megawatt-hours (MWh) of electricity per year by 2017. That is equal to all the electricity used per year by 2,457 homes in the Holy Cross service area, spread across Eagle, Pitkin and Garfield counties.

Last year, 829 Holy Cross consumers completed more than 1,000 energy upgrades that will save 10,106 MWh of electricity per year, according to Mary Wiener, energy efficiency program administrator for Holy Cross. "This is on top of 6,241 MWh of annual savings from projects done in 2013, so we are halfway to our goal in the first two years," Wiener said.

The first half of 2015 builds on that trend with the co-op paying out rebates for 667 measures. Wiener estimates that the annual savings from this year's projects so far will total more than 3 million kWh. "And these savings will continue for years into the future," she added.

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WHAT'S INSIDE

Holy Cross consumers

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Rebates offset project costs

Holy Cross Energy provides expert help and rebates to help its residential and commercial consumers make these upgrades.

"We understand that people appreciate getting help to make smart decisions, and the rebates show our consumers that we are their partner in energy efficiency," said Wiener.

Holy Cross paid out more than $1.1 million in rebates in 2014 to consumers to offset a portion of their investments in energy savings. A 2-percent surcharge added to electric bills provides funding for the rebates.

Holy Cross staff visited more than 200 homes to provide complimentary home energy assessments. The co-op also helped pay for 68 Energy Smart Colorado home assessments. A total of 592 households made energy upgrades in 2014, said Wiener. "LED lights and recycling old refrigerators were by far the most popular upgrades," she said. "People also replaced leaky windows, switched to programmable thermostats, swapped out their old holiday lights for LED strings and installed heat tape timers."

Holy Cross also continued its partnership with the Northwest Colorado Council of Governments (NWCCOG) to offer a home weatherization program to income-qualified households. In 2014, the NWCCOG crew made upgrades for 22 households, using a $46,000 contribution from Holy Cross.

Joseph Clark pitches in to stock shelves. Holy Cross Energy helps small, family-owned businesses like Clark's Market succeed by keeping energy costs down. (Photo by Holy Cross Energy)

LED lighting is project of choice

Partnering with Energy Smart Colorado has enabled Holy Cross to reach more businesses and multi-family housing properties. Energy Smart Colorado is administered by three local energy organizations, Clean Energy Economy for the Region, Community Office for Resource Efficiency and Walking Mountains Science Center. The partnership also provides free building walk-throughs and energy coaching to business and rental property owners.

Because such facilities use so much more electricity than single-family homes, projects at 177 of these properties delivered 93 percent of the total electric savings from 2014 projects.

For these projects, LED lighting was the upgrade of choice, delivering the added benefit of reduced maintenance. "LED lighting is the hot ticket for businesses, lodges and condos," said Wiener. "These projects deliver immediate energy savings and rapid payback on your investment. We expect to see a lot more lighting upgrades as people see the excellence of these new LED fixtures and bulbs."

More rebates available

Saving energy through efficiency upgrades and generating energy from solar panels means Holy Cross Energy is passing up sales of electricity. "Why would a utility want its consumers to use less electricity? Because it actually saves Holy Cross money," explained Holy Cross CEO Del Worley. "In fact, we expect the savings from this past year's efforts to save Holy Cross $1.8 million in power costs over the next five years."

Worley pointed out that energy conservation is a cost-effective alternative to investing in costly new power plants, and it reduces the peak demand charges utilities pay their suppliers. Conservation is the most cost-effective investment we can make," he added.

Members have shown that they support that investment by their participation in the co-op's rebate program. Holy Cross Energy will continue to support their members—and its five-year goal—with rebate funding and technical assistance to home and business owners.

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ENERGY SERVICES
Western Area Power Administration

FREE WEBINARS COVER THERMOGRAPHY BASICS, MORE

For anyone who is new to IR cameras or who needs a refresher, the Infrared Training Center (ITC) is offering free live and on-demand web courses.

These educational sessions provide a convenient and informative way to learn more about one of the most useful and versatile tools in an energy manager's kit. Topics cover tips and tricks (presented July 22, access it from the on-demand list), thermography basics, safety, software basics, capturing and interpreting thermal images and much more. Each webinar is 45 to 60 minutes in length, and the live events include a question and answer session with participants. The speakers are top industry experts.

Need to know

These events are presented from locations around the world, so the start time given is the local time. Be sure to double-check the start time and time zone when registering. If the webinar occurs too far away from your time zone, you may have to wait for the on-demand recording. See ITC's webinar FAQs to learn more about scheduling and system requirements.

Many training options

In addition to the webinars, ITC also offers online course packages and four-day regional training courses for certification.

(Photo by Infrared Training Center)

For busy novices to energy auditing and diagnostics, ITC webinars can provide a valuable foundation for your infrared inspections. The price is right for experienced technician who just want to brush up on the basics and maybe pick up some new tricks. There is always something more to learn about the world of thermography, and no better way to do it than from your our desktop, laptop, tablet or smartphone—for free!

Editor's note: **If you haven't yet discovered infrared cameras and all they can do for a utility, contact our Equipment Loan Program, 720-962-7420, to learn more.**

ask the energy experts

MEASURING RESULTS FOR APPLIANCE REBATE PROGRAMS

QUESTION:

Our utility is designing a rebate program for customers who purchase energy-efficient refrigerators. To help us estimate potential savings, we need information on the energy consumption of older refrigerators that may run longer (during each on/off cycle) or even continuously.

ANSWER:

The average cycle times of a well-maintained refrigerator should not change as the appliance gets older, unless it is somehow damaged. If a refrigerator does run continuously, something is wrong. Possible reasons for older refrigerators running longer or continuously include:

- Dust and debris buildup on the condenser coil
- Blocked internal vents inside an overloaded refrigerator
- Damaged door seals or door misalignment
- Frost buildup on the inside of manual-defrost refrigerators, or a malfunctioning defrost mechanism on automatic-defrost refrigerators
- Partial loss of the refrigerant charge due to slow leakage of refrigerant

Adding a repair component to your program may expand its reach to increase energy savings and build trust with your customers. Also, consider using bill stuffers and other outreach opportunities to educate customers on routine refrigerator upkeep. Find more tips for efficient refrigerator operation and Energy Saver, a website by the Department of Energy to help consumers reduce their carbon footprint.

ENERGY STAR-qualified refrigerators use 15 percent less energy than non-qualified models. Models with top-mounted freezers use 10 to 25 percent less energy than side-by-side or bottom-mount units.

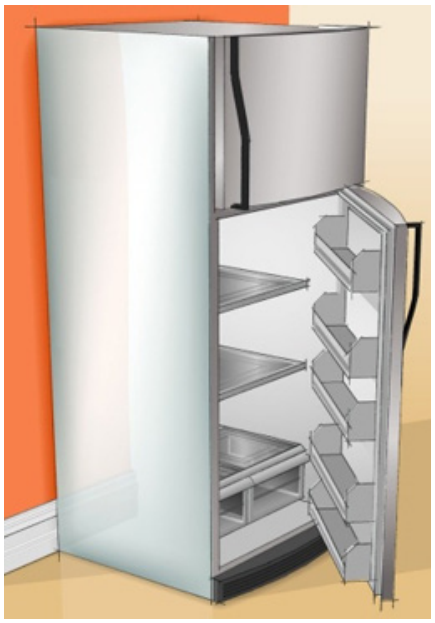
Calculating savings

Once a refrigerator reaches the end of its useful life—which it may be if it is running continuously—it is going to be replaced anyway. Usually, the goal of an incentive program is to encourage customers to replace older, less-efficient, but still functioning, appliances with high-efficiency models. A properly functioning older refrigerator uses less energy than the continuously running one, so calculating your program's energy savings based on the latter will give you an overly optimistic estimate.

Documentation of Calculation Methodology, Input Data, and Infrastructure, by Home Energy Saver and Lawrence Berkeley Laboratory, is a useful publication for calculating the energy consumption of major appliances, including older refrigerators. Updated in 2008, this reference includes energy factors for several different refrigerator styles from 1972 to 2003. A table gives typical refrigerator sizes and there are equations for calculating adjusted volume and energy consumption.

Home Energy Saver also provides a chart that gives default energy consumption estimates for a variety of home appliances and systems.

Other resources you may find helpful include the Energy Star Refrigerator Retirement Savings Calculator. It allows visitors to estimate the energy savings for replacing refrigerators manufactured up to 2008 with an Energy Star-qualified model. Top Ten USA shows annual energy cost savings for the 10 most efficient refrigerators on the market. Knowing what refrigerator models are readily available in your area might be helpful as well in estimating program savings.



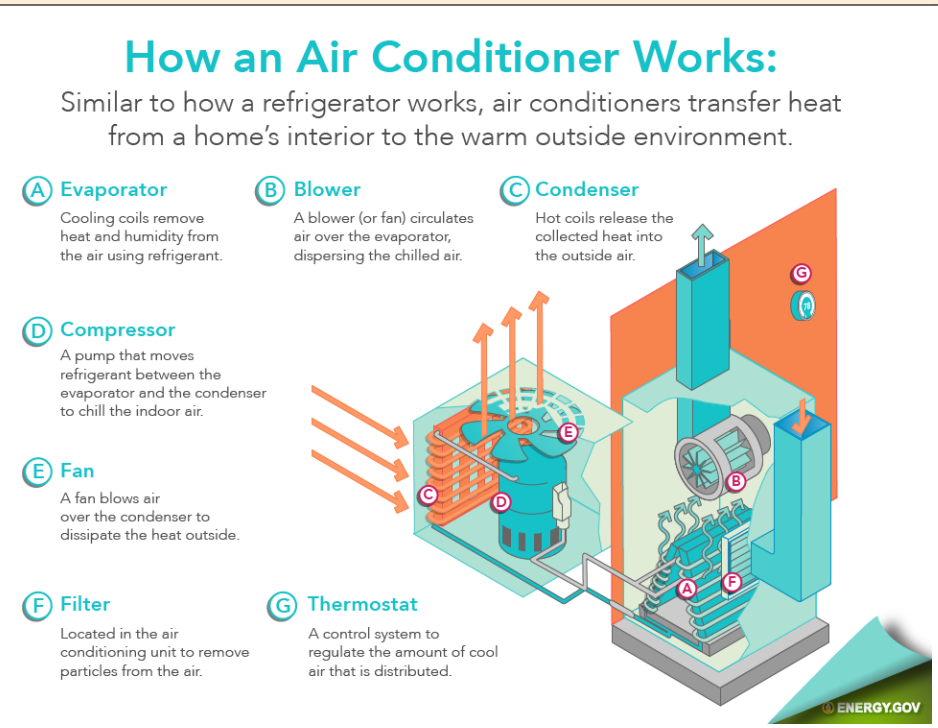
ENERGY STAR-qualified refrigerators use 15 percent less energy than non-qualified models. Models with top-mounted freezers use 10 to 25 percent less energy than side-by-side or bottom-mount units. (Artwork by DOE Energy Saver)

Estimating Appliance and Home Electronic Energy Use, an article on the Energy Saver blog, makes good reading for customers who are particularly engaged in managing their home energy use. Cultivating a relationship with your "true believers" is a good way to gain anecdotal data on the real-life performance of your programs. This information can be valuable in refining existing programs and developing new ones.

COOL SUMMER ELECTRICITY BILLS WITH ENERGY SAVERS INFOGRAPHIC

We are now officially in the dog days of summer with all its attendant peaks and calls about high electric bills. AroundTheWeb

Maybe you have already sent out our Cooling Tip Sheet bill stuffer, but repetition is the secret to education. Everything You Need to Know About Home Cooling, an infographic from the Department of Energy (DOE), offers another simple and effective way to remind your customers that they can take control of their energy use, even when it is hot, hot, hot.



This slide from DOE Energy Saver would make a great handout at your next customer event. (Art by DOE Energy Saver)

The infographic starts off with the sobering truth about cooling. Air conditioners use about 5 percent of all the electricity produced in the U.S., and homeowners spend more than $11 billion a year to beat the heat. That sets the stage for the hopeful news that customers can save 20 to 50 percent on home cooling. (Hint: It involves upgrading to a high-efficiency air conditioner, a helpful factoid if your utility just happens to offer an incentive program.)

In addition to advice on efficiency and maintenance, the infographic covers different options for cooling, along with the costs, pros and cons of each type of equipment. There is also a brief explanation of how an air conditioner works and some tips for troubleshooting.

Energy Saver, DOE's program to help consumers reduce their carbon footprint, created the infographic as well as a series of slides, available to download. Print the whole series for visuals and handouts at customer meetings and outreach events.

While you are visiting the Energy Saver website, check out other tips and materials you can share with customers. It is always the right season to educate your customers on how to save some cash while improving their comfort. And to help your member services representatives keep their cool throughout the year.

COLLABORATIVE SEEKS DATA FOR NEW INDUSTRIAL EFFICIENCY INITIATIVE

Large industrial energy consumers have a chance to join a collaborative effort to create a new type of energy-efficiency program that would ultimately provide them with incentives to purchase more efficient industrial equipment. The Extended Motor Product Label Initiative (EMPLI) would also give utility efficiency program managers prescribed savings values for the energy performance of industrial motor-driven products.

The American Council for an Energy Efficient Economy (ACEEE) is working with the Hydraulic Institute (HI), Air Movement and Control Association International, Compressed Air and Gas Institute, Fluid Sealing Association, National Electrical Manufacturers Association (NEMA) and a dozen utilities and energy-efficiency programs to launch this initiative. Central to the program are voluntary performance labels that show the comparative efficiency of an "extended product" comprised of a driven component (e.g., fan, pump, or compressor), a motor and associated controls.

Donate data to science

EMPLI has reached the point where the working groups need product category-specific application and operational data to determine the average potential savings. The collaborative is starting with collecting water pumping system operating hours and loads. This information will be used in program proposals to state public service commissions to document that labeled products save energy.

HI and NEMA Business Information Services (NEMA Biz) have contracted with the collaborative to collect, anonymize and aggregate the data. Organizations interested in participating can download a data collection sheet on the HI website, fill it out and submit it electronically to NEMA Biz for analysis. The submission deadline is Sept. 30, 2015. All individual company data will remain secure and will not be shared with anyone.

The EMPLI pump working group is requesting general data, such as hours of operation, percentage loading, product performance and markets served. NEMA Biz will anonymize and aggregate the data and return it to the working group in a format that state public utility commissions will be able to use for program justification and evaluation. Participating organizations will also receive a copy of the aggregated data.

This information will provide insights into the marketplace and enable participants to position their products for new utility-sector funding opportunities. The better the data, the more complete the report will be for all involved.

Building better programs

Collecting operational data is necessary for the success of the EMPL Initiative. The goal of the collaborative effort is to develop product performance labels that companies and public institutions can use as purchasing specifications. The labels will also provide the basis for an entirely new type of prescriptive rebate energy-efficiency program that attributes or "deems" an average energy savings to a qualifying product.

EMPLI has the potential to help industrial consumers and their power providers to move beyond individual equipment upgrades to increase the efficiency of entire systems. ACEEE is urging utilities to share this request with their commercial and industrial customers, and to participate in the survey themselves if it is appropriate for the utility.